Human Placental Lactogen (HPL)

HUMAN PLACENTAL LACTOGEN (HPL), also known as human chorionic somatomammotrophin, is a polypeptide hormone synthesized by placental syncytiotrophoblast. Circulating levels during the second half of pregnancy are in the 1 microgram per milliliter range, progressively rising from about 2 micrograms at 20 weeks to about 7 micrograms at 38 weeks. Consistently low levels throughout pregnancy or a sudden drop during the third trimester correlate strongly with fetal distress or neonatal asphyxia. During the first part of pregnancy, low levels are sensitive predictors of abortion. Technically, this is the simplest of radioimmunoassay procedures, and it is currently said to be the one most commonly done in Great Britain. HPL levels can also be detected by immunodiffusion in agar gel, but this technique is subject to greater variability.

Urinary estriol levels also reflect fetal and placental status, but the day-to-day variation may be wide. As the biological half-life of HPL is measured in minutes, it promptly reflects placental dysfunction or fetal distress.

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"False Positive" Fluorescent Treponemal Antibody-Absorption Test Reactions

THE FLUORESCENT TREPONEMAL ANTIBODY-ABSORPTION (FTA-ABS) test was brought into the laboratory as a specific test for infection with Treponema pallidum. A variety of modifications of the original FTA procedure eliminated many of the nonspecific positive reactions found during preliminary trials. However, as the modified procedure began to be used in routine laboratories, several instances of "false positive" reactivity were reported.

The various diseases or clinical states in which such a positive reaction has reportedly occurred include systemic lupus erythematosus (SLE), pregnancy, vaccination and aging. One study of 250 nuns revealed three cases of definite positive reaction and five with borderline reaction, with no evidence of syphilis. An atypical fluorescent pattern has been reported in SLE, but not all laboratory personnel might recognize this.

Recently in our laboratory a higher than expected incidence of positive reactions was found in patients over the age of 50; many of the possible false-positive reactions were of low grade fluorescence. The fluorescence probably should be graded and reported as such, since many of the "false-positives" are of low grade fluorescence.

In any case, the FTA-ABS remains a useful and worthwhile confirmatory test, but must be used in conjunction with other laboratory tests, the patient's history and physical examination in establishing the diagnosis of syphilis.

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New (but Old) Hazards in Autopsy Pathology

VIRUSES ARE frequently unappreciated in the autopsy room. Such agents are difficult to see, culture, and identify, are often unsuspected clinically, and can cause the appearance of cryptic disorder in the pathologist. Particularly important are hepatitis and smallpox, but of increasing interest are conditions associated with the "slow viruses": Neurological afflictions, such as Jacob-Creutzfeld disease, are thought to be due to slow viruses that have recently been shown to be transmissible, have long incubation periods, and are uniformly fatal. There is a growing suspicion that at least some human neoplastic diseases, such as myelogenous leukemia and possibly certain sarcomas may be of viral cause, and thus potentially infectious. Tissues from such cases have heretofore been treated with disdain for infectious possibilities. It is frightening, however, to find that at least the slow viruses are not inactivated by death of the host or by subjecting them to formalin or to ultraviolet radiation. Autopsy room procedures should be re-examined, scrupulous technique employed, and soiled materials autoclaved or otherwise sterilized for personnel safety.

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